

## The CATS Novice Reduction Requirement: An Early Review

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Arthur A. Thacker

Human Resources Research Organization (HumRRO)  
950 Breckenridge Lane, Suite 170  
Louisville, KY 40207  
Phone (502) 721-9045  
FAX (502) 721-9983

*Prepared for:*

Kentucky Department of Education  
Capital Plaza Tower, 18<sup>th</sup> Floor  
500 Mero Street  
Frankfort, KY 40501

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### **Introduction**

The Commonwealth Accountability Testing System (CATS) assigns rewards or assistance based on an improvement score that is compared to each school's individual growth plan. Students are assessed using the Kentucky Core Content Test (KCCT), a major component of CATS. In order for schools to qualify for rewards, students in each successive cohort must improve on the KCCT and meet a newly implemented criterion to reduce the proportion of low-performing students.

Schools are placed in categories based on a composite of CATS components. Components include Mathematics, Reading, Science, Social Studies, Arts & Humanities, Practical Living/Vocational Studies, Writing, a Norm-referenced Test, and Non-Academic indicators. Each component is weighted in the formula used to calculate school index scores (KDE, 2002). If a school meets or exceeds its goal, then it is placed in the "Meets Goal" category and qualifies for monetary rewards. Each school's goal is based on a straight line improvement chart designed such that schools will reach an index score of 100 by the year 2014. If the school's score is below the goal line, but on pace to reach a score of 80 by 2014, then it is placed in the "Progressing" category. These schools are "held harmless" in the accountability system (KDE, 2003). These schools receive neither rewards nor assistance. If a school's score is lower than the Progressing line, then it is placed in the "Assistance" category. Rewards and assistance are allotted on a two-year cycle.

In addition to improving the overall mean student KCCT scores, an extra requirement was added for the 2001-2002 cycle (rewards and assistance are allotted on a two-year cycle). In order to qualify for rewards, a school must meet both its goal score as well as the Novice Reduction criterion which requires schools to reduce the proportion of students scoring Novice (the lowest student performance category) on the KCCT. Students are classified as Novice, Apprentice, Proficient, or Distinguished based on their KCCT scores in each tested subject. Each successive classification is associated with a higher numerical score. Novice students earn the fewest points in the school accountability index formula.

While it is apparent that a reduction in the number of Novice students at a school would likely result in a higher overall score, it is also conceivable that a school's improvement strategy might focus on the students in higher categories. For instance, if a sufficient number of Apprentice students moved up to Proficient, and/or Proficient students moved into the Distinguished range, a school might meet its improvement goal while maintaining or increasing the proportion of Novice students. The Novice Reduction criterion, however, precludes this. Schools must focus on reducing the number of low-performing students.

A Novice Reduction criterion is calculated for each school in much the same manner as the overall goal score. By 2014, schools should have a total population of Novice students that is no more than 5% of total school enrollment. Each school's Novice Reduction criterion is aimed at ensuring that this goal is met. Schools with larger proportions of Novice students must reduce the proportion to a greater extent each cycle than those with a smaller proportion of Novice students.

This study describes aspects of schools classified as Meets Goal-Novice Reduction. These schools would have received rewards if not for the Novice Reduction requirement. We focused on the elementary school level, in part due to the interests of the Kentucky Department of Education (KDE), and because more elementary schools lost rewards due to the Novice Reduction requirement than middle or high schools. Sixteen elementary schools, 2 middle schools, and 1 high school were denied rewards due to the Novice Reduction criterion. These numbers should be considered in conjunction with the fact that there are also many more elementary schools than middle or high schools in Kentucky. All but two of the 16 elementary schools reduced the proportion of Novice students, although the reductions were less than the respective schools' Novice Reduction goals. Two of the Meets Goal elementary schools had a small increase in their proportions of Novice students.

## **Data Analysis**

Table 1 presents accountability data for the Meets Goal-Novice Reduction elementary schools. The table includes each school's name and associated district. It also includes an estimate of the number of students tested in each school's combined 4<sup>th</sup> and 5<sup>th</sup> grades. Student numbers are estimated because they change from year to year. The number was derived by averaging the number of students tested each year from 1999-2002. Table 1 also includes each school's 2001-02 index score. When considering these schools, it is important to keep in mind that all schools have an official index goal of 100 and that scores above 80 are not placed in the Assistance category.

Table 1 shows that these schools are relatively high scoring. Only three of the schools in this category had academic indexes lower than the state average of 67.2 for Cycle 2. Their population varies widely from fewer than 30 students in the 4<sup>th</sup> and 5<sup>th</sup> grades combined to more than 200. Their proportion of Novice students is also greatly varied, ranging from more than 40% to fewer than 10% for Cycle 2.

Table 1. School Accountability Summary Data

District	School	N 4th + 5 <sup>th</sup> Grade	% Novice 0102	Index 0102
Menifee County	Menifee County ES	101.25	22.93	72.30
Meade County	Battletown ES	28.25	22.69	73.90
McCracken County	Concord ES	147.00	16.02	79.10
Science Hill	Science Hill	99.50	9.79	83.90
Montgomery County	Mount Sterling ES	204.75	18.69	77.50
Casey County	Douglas ES	62.00	25.64	71.10
Glasgow Independent	E B Terry ES	81.25	26.15	74.80
Pulaski County	Woodstock ES	57.25	23.20	71.40
Kenton County	R C Hinsdale	196.75	9.71	86.50
Pike County	Robinson Creek ES	90.25	24.80	71.40
Campbell County	Highland Heights	61.75	28.76	69.20
McLean County	Calhoun ES	98.25	9.53	88.20
Butler County	Third District	48.25	18.92	78.90
Knott County	Caney Creek ES	32.25	42.23	59.00
McCreary County	Pine Knot ES	197.75	33.45	61.60
Ashland Independent	Hatcher ES	55.50	37.75	60.50

Table 2 indicates that the schools were varied in terms of their demographic make-up as well. No pattern with regard to the proportion of males versus females, socioeconomic status, disability, or ethnicity appears to be related with the Novice Reduction criterion. So, while it is well documented that socioeconomic status is positively correlated with KCCT scores, this data shows that schools with a higher proportion of poor students are no more likely to be denied rewards due to the Novice Reduction criterion.

Table 2. School Demographic Data

School	Gender F/M	SES (Lunch) % Approved	Disability Status % With Disabilities	White	African American	Hispanic
Menifee County ES	45/58	69%	14%	100 %	0%	0%
Battletown ES	20/14	50%	18%	100 %	0%	0%
Concord ES	57/78	32%	10%	93%	6%	1%
Science Hill	37/59	42%	13%	97%	3%	0%
Mount Sterling ES	104/10 0	47%	10%	95%	5%	0%
Douglas ES	37/25	69%	11%	98%	0%	2%
E B Terry ES	45/32	74%	14%	73%	27%	0%
Woodstock ES	31/26	58%	18%	100 %	0%	0%
R C Hinsdale	92/110	6%	9%	99%	0%	1%
Robinson Creek ES	43/49	70%	5%	99%	0%	1%
Highland Heights	27/44	38%	21%	100 %	0%	0%
Calhoun ES	49/39	49%	9%	99%	1%	0%
Third District	22/26	43%	10%	100 %	0%	0%
Caney Creek ES	19/11	80%	10%	97%	0%	3%
Pine Knot ES	101/10 5	89%	12%	99%	1%	0%
Hatcher ES	25/29	96%	33%	94%	6%	0%

Note: F=Female, M=Male, SES (Lunch) refers to the number of students approved for free- or reduced-price-lunch

Table 3 contains data regarding the Novice students at each of these schools in comparison to the school population. The column labeled “Approximate # Students” represents the number of students needing to score above Novice for the school to have met the Novice Reduction goal. For 10 of the 16 schools, fewer than one additional student would have needed to score above Novice to avoid the Novice Reduction classification and qualify for rewards. Of course, one cannot separate students into fractions; rather this means that the majority of these schools missed their Novice Reduction goals by a few component test scores on the KCCT. Because the component tests are weighted differently in the calculation (KDE 2002), it is impossible to determine precisely the number of component tests by which the schools missed their goals. It should also be noted that the number of students is approximate, based on the average number of students who completed KCCT in each of the two cycles.

Table 3. Novice Student Data

School	% Novice Cycle 1	Reduction Cycle 1-2	Reduction Goal	Difference Actual-Goal	Approximate # Students
Menifee County ES	24.76	-1.83	-2.82	0.99	1.01
Battletown ES	24.42	-1.73	-2.77	1.04	0.30
Concord ES	17.64	-1.62	-1.81	0.19	0.27
Science Hill	11.38	-1.59	-0.91	0.68	0.68
Mount Sterling ES	20.82	-2.13	-2.26	0.13	0.27
Douglas ES	27.21	-1.57	-3.17	1.60	0.99
E B Terry ES	28.45	-2.30	-3.35	1.05	0.85
Woodstock ES	24.16	-0.96	-2.74	1.78	1.02
R C Hinsdale	9.86	-0.15	-0.69	0.54	1.07
Robinson Creek ES	26.67	-1.87	-3.10	1.23	1.11
Highland Heights	25.76	3.00	-2.97	5.97	3.68
Calhoun ES	9.58	-0.05	-0.65	0.60	0.59
Third District	17.72	1.20	-1.82	3.02	1.46
Caney Creek ES	47.69	-5.46	-6.10	0.64	0.21
Pine Knot ES	37.93	-4.48	-4.70	0.22	0.44
Hatcher ES	42.93	-5.18	-5.42	0.24	0.13

Another way of examining the scores of the Meets Goal-Novice Reduction schools is to consider the actual amount of improvement, in relation to their individual goals, made by these schools. More simply, it is illustrative to see how close to the cut score between the Meets Goal and Progressing categories these schools were. However, when these schools' Cycle 2 scores are compared with their goals, only E. B. Terry Elementary scored higher than its true improvement goal. The reason the rest of the Meets Goal-Novice Reduction schools were eligible for rewards is because of a safety net built into the accountability system. The safety net allows for schools that score within one standard error of measurement of the cut score to be classified in the next higher category (KDE, 2002). This rule was designed to give schools the benefit of the doubt while recognizing the level of precision of the measurement tools. The Interpretive Guide (KDE, 2002) represents the standard error rule by the thickness of the line indicating the Meets Goal and Progressing categories. All but one of the Meets Goal-Novice Reduction schools is on that line. If the lines were drawn and classifications made without the SEM safety net, 15 of the 16 schools would be classified as Progressing.

## Conclusions

Two important conclusions can be made with regard to this analysis of Meets Goal-Novice Reduction school data. The first is that it is very difficult to qualify for rewards in Kentucky's accountability system without also significantly reducing the proportion of Novice students at the school. If the Novice Reduction criterion were not in place, the accountability status of the vast majority of Kentucky's schools would be unaffected. Only 16 of the 795 elementary schools (about 2%) containing either a 4<sup>th</sup> or 5<sup>th</sup> grade were affected at all. The few schools that were affected by the Novice Reduction criterion only missed their Novice Reduction goals by a small margin.

Secondly, the schools affected by the Novice Reduction criterion barely qualified for rewards at all. Only one of the schools actually surpassed its true improvement goal. The rest were placed in the Meets Goal category only because the accountability system has a safety net designed to give schools scoring near the cut point for rewards the benefit of the doubt. In all but one case, the Novice Reduction criterion only denied rewards for schools that would have been classified as progressing if not for the safety net.

## References

Kentucky Department of Education (2003). *CATS 2002 interpretive guide detailed information about how to use your score reports*. Version 1.02. Frankfort, KY: Author.